

WE CLAIM:

1. A method for treating alopecia or promoting hair growth in an animal, which comprises administering to said animal an effective amount of a pipecolic acid derivative.
2. The method of claim 1, wherein the pipecolic acid derivative has an affinity for an FKBP-type immunophilin.
3. The method of claim 2, wherein the FKBP-type immunophilin is FKBP-12.
4. The method of claim 1, wherein the pipecolic acid derivative is immunosuppressive.
5. The method of claim 1, wherein the pipecolic acid derivative is non-immunosuppressive.
6. The method of claim 1, wherein the pipecolic acid derivative is Way-124,666.
7. The method of claim 1, wherein the pipecolic acid derivative is rapamycin.
8. The method of claim 1, wherein the pipecolic acid derivative is Rap-Pa.

9. The method of claim 1, wherein the pipecolic acid derivative is SLB-506.

10. The method of claim 1, wherein the pipecolic acid derivative is selected from the group consisting of:

4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-trimethoxyphenyl)acetyl]hexahydro-2-pyridinecarboxylate;

10 4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-trimethoxyphenyl)acryloyl]hexahydro-2-pyridinecarboxylate;

15 4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-trimethoxyphenyl)propanoyl]hexahydro-2-pyridinecarboxylate;

4 - (4-methoxyphenyl)butyl (2S)-1-[2-oxo-2-(3,4,5-trimethoxyphenyl)acetyl]hexahydro-2-pyridinecarboxylate;

20 3-cyclohexylpropyl (2S)-1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

3-phenylpropyl (2S)-1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

25 3-(3,4,5-trimethoxyphenyl)propyl (2S)-1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

(1R)-2,2-dimethyl-1-phenethyl-3-butenyl (2S)-1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

(1*R*) -1,3-diphenylpropyl (2*S*) -1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

(1*R*) -1-cyclohexyl-3-phenylpropyl (2*S*) -1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

5 (1*S*) -1,3-diphenylpropyl (2*S*) -1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

(1*S*) -1-cyclohexyl-3-phenylpropyl (2*S*) -1-(3,3-dimethyl-2-oxopentanoyl)hexahydro-2-pyridinecarboxylate;

10 (22*aS*) -15,15-dimethylperhydropyrido[2,1-c] [1,9,4]dioxazacyclononadecine-1,12,16,17-tetraone;

(24*aS*) -17,17-dimethylperhydropyrido[2,1-c] [1,9,4]dioxazacycloheicosine-1,14,18,19-tetraone;

15 ethyl 1-(2-oxo-3-phenylpropanoyl)-2-piperidinecarboxylate;

ethyl 1-pyruvoyl-2-piperidinecarboxylate;

ethyl 1-(2-oxobutanoyl)-2-piperidinecarboxylate;

ethyl 1-(3-methyl-2-oxobutanoyl)-2-piperidinecarboxylate;

20 (24*aS*) -17,17-dimethylperhydropyrido[2,1-c] [1,9,4]dioxazacyclononadecine-1,12,16,17-tetraone;

ethyl 1-(4-methyl-2-oxopentanoyl)-2-piperidinecarboxylate;

ethyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

25 ethyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

4-[2-(ethyloxycarbonyl)piperidino]-2,2-dimethyl-3,4-dioxobutyl acetate;

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- ethyl 1-[2-(2-hydroxytetrahydro-2H-2-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- ethyl 1-[2-(2-methoxytetrahydro-2H-2-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- 5 ethyl 1-[2-(1-hydroxycyclohexyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- ethyl 1-[2-(1-methoxycyclohexyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- 10 ethyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;
- ethyl 1-(2-oxo-2-piperidinoacetyl)-2-piperidinecarboxylate;
- ethyl 1-[2-(3,4-dihydro-2H-6-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- 15 ethyl 1-(2-oxo-2-phenylacetyl)-2-piperidinecarboxylate;
- ethyl 1-(4-methyl-2-oxo-1-thioxopentyl)-2-piperidinecarboxylate;
- 20 3-phenylpropyl 1-(2-hydroxy-3,3-dimethylpentanoyl)-2-piperidinecarboxylate;
- (1R)-1-phenyl-3-(3,4,5-trimethoxyphenyl)propyl 1-(3,3-dimethylbutanoyl)-2-piperidinecarboxylate;
- (1R)-1,3-diphenylpropyl 1-(benzylsulfonyl)-2-piperidinecarboxylate;
- 25 3-(3,4,5-trimethoxyphenyl)propyl 1-(benzylsulfonyl)-2-piperidinecarboxylate;
- 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-

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tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylic acid;

methyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

isopropyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

benzyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

1-phenylethyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

(Z)-3-phenyl-2-propenyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

3-(3,4-dimethoxyphenyl)propyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-

methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

5 *N*2 - b e n z y l - 1 - (2 - [(2 R , 3 R , 6 S) - 6 -
 [(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-
 12-oxo-3,5,7-tridecatrienyl] - 2 - hydroxy - 3 -
 methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

10 *N*2 - (3-phenylpropyl) - 1 - (2 - [(2 R , 3 R , 6 S) - 6 -
 [(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-
 12-oxo-3,5,7-tridecatrienyl] - 2 - hydroxy - 3 -
 methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

15 (*E*) - 3 - (3,4-dichlorophenyl) - 2-propenyl 1 - (3,3-dimethyl-2-oxopentanoyl) - 2-piperidinecarboxylate;

20 (*E*) - 3 - (3,4,5-trimethoxyphenyl) - 2-propenyl 1 - (3,3-dimethyl-2-oxopentanoyl) - 2-piperidinecarboxylate;

 (*E*) - 3 - phenyl - 2 - propenyl 1 - (3,3-dimethyl-2-oxopentanoyl) - 2-piperidinecarboxylate;

25 (*E*) - 3 - ((3-(2,5-dimethoxy) - phenylpropyl) phenyl) - 2 -
 propenyl 1 - (3,3-dimethyl-2-oxopentanoyl) - 2 -
 piperidinecarboxylate;

 (*E*) - 3 - (1,3-benzodioxol-5-yl) - 2 - propenyl 1 - (3,3-dimethyl-2-oxopentanoyl) - 2-piperidinecarboxylate;

 4 - (4-methoxyphenyl) butyl 1 - (2-oxo-2-phenylacetyl) - 2-piperidinecarboxylate;

 3-phenylpropyl 1 - (2-oxo-2-phenylacetyl) - 2-piperidinecarboxylate;

 3-(3-pyridyl)propyl 1 - (2-oxo-2-phenylacetyl) - 2-

piperidinecarboxylate;

3-(3-pyridyl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

5 4-phenyl-1-(3-phenylpropyl)butyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

4-(4-methoxyphenyl)butyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

1-(4-methoxyphenethyl)-4-phenylbutyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

10 3-(2,5-dimethoxyphenyl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

3-(1,3-benzodioxol-5-yl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

15 1-phenethyl-3-phenylpropyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;

4-(4-methoxyphenyl)butyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;

3-cyclohexylpropyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;

20 3-phenylpropyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;

3-cyclohexylpropyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

25 3-phenylpropyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

4-(4-methoxyphenyl)butyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

4-phenyl-1-(3-phenylpropyl)butyl 1-(3,3-dimethyl-

2-oxobutanoyl)-2-piperidinecarboxylate; and
pharmaceutically acceptable salts, esters, and
solvates thereof.

5 11. A pharmaceutical composition which
comprises:

- (i) an effective amount of a pipecolic acid derivative for treating alopecia or promoting hair growth in an animal; and
10 (ii) a pharmaceutically acceptable carrier.

15 12. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative has an affinity for an FKBP-type immunophilin.

16 13. The pharmaceutical composition of claim 12,
wherein the FKBP-type immunophilin is FKBP-12.

20 14. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is immunosuppressive.

25 15. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is non-immunosuppressive.

26 16. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is Way-124,666.

17. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is rapamycin.

18. The pharmaceutical composition of claim 11,
5 wherein the pipecolic acid derivative is Rap-Pa.

19. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is SLB-506.

10 20. The pharmaceutical composition of claim 11,
wherein the pipecolic acid derivative is selected from
the group consisting of:

15 4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-
trimethoxyphenyl)acetyl]hexahydro-2-
pyridinecarboxylate;

4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-
15 trimethoxyphenyl)acryloyl]hexahydro-2-
pyridinecarboxylate;

20 4 - (4-methoxyphenyl)butyl (2S)-1-[2-(3,4,5-
trimethoxyphenyl)propanoyl]hexahydro-2-
pyridinecarboxylate;

4 - (4-methoxyphenyl)butyl (2S)-1-[2-oxo-2-(3,4,5-
15 trimethoxyphenyl)acetyl]hexahydro-2-
pyridinecarboxylate;

25 3-cyclohexylpropyl (2S)-1-(3,3-dimethyl-2-
oxopentanoyl)hexahydro-2-pyridinecarboxylate;

3-phenylpropyl (2S)-1-(3,3-dimethyl-2-
15 oxopentanoyl)hexahydro-2-pyridinecarboxylate;

3 - (3, 4, 5-trimethoxyphenyl)propyl (2*S*) -1 - (3, 3 -
dimethyl - 2 - oxopentanoyl) hexahydro - 2 -
pyridinecarboxylate;

(1*R*) -2, 2-dimethyl-1-phenethyl-3-butenyl (2*S*) -1 -
5 (3, 3 - dimethyl - 2 - oxopentanoyl) hexahydro - 2 -
pyridinecarboxylate;

(1*R*) -1, 3-diphenylpropyl (2*S*) -1 - (3, 3-dimethyl-2 -
oxopentanoyl) hexahydro - 2 - pyridinecarboxylate;

(1*R*) -1-cyclohexyl-3-phenylpropyl (2*S*) -1 - (3, 3 -
10 dimethyl - 2 - oxopentanoyl) hexahydro - 2 -
pyridinecarboxylate;

(1*S*) -1, 3-diphenylpropyl (2*S*) -1 - (3, 3-dimethyl-2 -
oxopentanoyl) hexahydro - 2 - pyridinecarboxylate;

(1*S*) -1-cyclohexyl-3-phenylpropyl (2*S*) -1 - (3, 3 -
15 dimethyl - 2 - oxopentanoyl) hexahydro - 2 -
pyridinecarboxylate;

(22*aS*) -15, 15-dimethylperhydropyrido[2, 1 -
c] [1, 9, 4] dioxazacyclononadecine-1, 12, 16, 17-tetraone;

(24*aS*) -17, 17-dimethylperhydropyrido[2, 1 -
20 c] [1, 9, 4] dioxazacycloheicosine-1, 14, 18, 19-tetraone;

ethyl 1 - (2 - oxo - 3 - phenylpropanoyl) - 2 -
piperidinecarboxylate;

ethyl 1-pyruvoyl-2-piperidinecarboxylate;

ethyl 1-(2-oxobutanoyl)-2-piperidinecarboxylate;

25 ethyl 1 - (3 - methyl - 2 - oxobutanoyl) - 2 -
piperidinecarboxylate;

ethyl 1 - (4 - methyl - 2 - oxopentanoyl) - 2 -
piperidinecarboxylate;

- ethyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;
- ethyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
- 5 4-[2-(ethyloxycarbonyl)piperidino]-2,2-dimethyl-3,4-dioxobutyl acetate;
- ethyl 1-[2-(2-hydroxytetrahydro-2H-2-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- 10 ethyl 1-[2-(2-methoxytetrahydro-2H-2-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- ethyl 1-[2-(1-hydroxycyclohexyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- ethyl 1-[2-(1-methoxycyclohexyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- 15 ethyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;
- ethyl 1-(2-oxo-2-piperidinoacetyl)-2-piperidinecarboxylate;
- 20 ethyl 1-[2-(3,4-dihydro-2H-6-pyranyl)-2-oxoacetyl]-2-piperidinecarboxylate;
- ethyl 1-(2-oxo-2-phenylacetyl)-2-piperidinecarboxylate;
- ethyl 1-(4-methyl-2-oxo-1-thioxopentyl)-2-piperidinecarboxylate;
- 25 3-phenylpropyl 1-(2-hydroxy-3,3-dimethylpentanoyl)-2-piperidinecarboxylate;
(1R)-1-phenyl-3-(3,4,5-trimethoxyphenyl)propyl 1-(3,3-dimethylbutanoyl)-2-piperidinecarboxylate;

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(1*R*) - 1, 3-diphenylpropyl 1-(benzylsulfonyl)-2-piperidinecarboxylate;

3 - (3, 4, 5-trimethoxyphenyl)propyl 1-(benzylsulfonyl)-2-piperidinecarboxylate;

5 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [(2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 2, 13-dimethoxy-3, 9, 11-trimethyl-12-oxo-3, 5, 7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylic acid;

methyl 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [(2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 10 2, 13-dimethoxy-3, 9, 11-trimethyl-12-oxo-3, 5, 7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

isopropyl 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [15 (2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 2, 13-dimethoxy-3, 9, 11-trimethyl-12-oxo-3, 5, 7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

benzyl 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [(2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 20 2, 13-dimethoxy-3, 9, 11-trimethyl-12-oxo-3, 5, 7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

1-phenylethyl 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [15 (2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 2, 13-dimethoxy-3, 9, 11-trimethyl-12-oxo-3, 5, 7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2*H*-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;

(Z)-3-phenyl-2-propenyl 1 - (2 - [(2*R*, 3*R*, 6*S*) - 6 - [15 (2*S*, 3*E*, 5*E*, 7*E*, 9*S*, 11*R*) - 2, 13-dimethoxy-3, 9, 11-trimethyl-

- 12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;
- 3-(3,4-dimethoxyphenyl)propyl 1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;
- N2-benzyl-1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;
- N2-(3-phenylpropyl)-1-(2-[(2R,3R,6S)-6-[(2S,3E,5E,7E,9S,11R)-2,13-dimethoxy-3,9,11-trimethyl-12-oxo-3,5,7-tridecatrienyl]-2-hydroxy-3-methyltetrahydro-2H-2-pyranyl)-2-oxoacetyl)-2-piperidinecarboxylate;
- (E)-3-(3,4-dichlorophenyl)-2-propenyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
- (E)-3-(3,4,5-trimethoxyphenyl)-2-propenyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
- (E)-3-phenyl-2-propenyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
- 25 (E)-3-((3-(2,5-dimethoxy)-phenylpropyl)phenyl)-2-propenyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
- (E)-3-(1,3-benzodioxol-5-yl)-2-propenyl 1-(3,3-

- dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
4 - (4-methoxyphenyl)butyl 1 - (2-oxo-2-phenylacetyl)-2-piperidinecarboxylate;
3-phenylpropyl 1-(2-oxo-2-phenylacetyl)-2-piperidinecarboxylate;
5 3-(3-pyridyl)propyl 1-(2-oxo-2-phenylacetyl)-2-piperidinecarboxylate;
3-(3-pyridyl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
10 4-phenyl-1-(3-phenylpropyl)butyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
4-(4-methoxyphenyl)butyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
15 1-(4-methoxyphenethyl)-4-phenylbutyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
3-(2,5-dimethoxyphenyl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
3-(1,3-benzodioxol-5-yl)propyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
20 1-phenethyl-3-phenylpropyl 1-(3,3-dimethyl-2-oxopentanoyl)-2-piperidinecarboxylate;
4-(4-methoxyphenyl)butyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;
25 3-cyclohexylpropyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;
3-phenylpropyl 1-(2-cyclohexyl-2-oxoacetyl)-2-piperidinecarboxylate;
3-cyclohexylpropyl 1-(3,3-dimethyl-2-

oxobutanoyl)-2-piperidinecarboxylate;

3-phenylpropyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

4-(4-methoxyphenyl)butyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate;

4-phenyl-1-(3-phenylpropyl)butyl 1-(3,3-dimethyl-2-oxobutanoyl)-2-piperidinecarboxylate; and

pharmaceutically acceptable salts, esters, and solvates thereof.